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## FURTHER NOTES ON THE OLIVIDAE.

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### I. ORIENTAL SPECIES.

As one very important work (Chenu's Illustrations Conchyliologiques, *Oliva* by Duclos) was not available at the time I wrote my previous notes (NAUTILUS, xxiv, pp. 49-51, 64-68, 121-124) on several species of *Oliva*, the names of which were affected by adopting the oldest recognizable characterization, it seems well at this time to briefly review the subject. I will therefore give a more complete synonymy of the species, together with some additional notes, hoping thus to show more clearly the changes in nomenclature and the relationship of the species and varieties.

#### 1. OLIVA SERICEA (Bolten).

*Porphyria sericea* Bolten, Mus. Bolt., p. 33, 1798.

*O. textilina* Lamarck, Ann. du Mus., xvi, 309, 1810.

Var. *tremulina* Lam., Ann. du Mus., xvi, 310, 1810.

*granitella* Lam., Ann. du Mus., xvi, 314, 1810.

*obtusaria* Lam., Anim. sans vert., vii, 436, 1822.

*hepatica* Lam., (not Marrat) Ann. du Mus., xvi, 320, 1810.

*fumosa* Marrat, Thes. Conch. iv, pl. 9, f. 119.

Var. *olympiadina* Ducl. (pars) in Chenu's Ill. Conch., pl. 13, f. 11, 12.

Var. *nobilis* Reeve, Conch. Icon., vi, pl. 2, figs 3 a-c, 1850.

Var. *pica* Lam., Ann. du Mus., xvi, 310, 1810.

*concinna* Marr., Thes. Conch., iv, pl. 7, f. 100, 101.

Var. *tenebrosa* Marr., Thes. Conch., iv, pl. 13, f. 177.

Var. *ponderosa* Duclos, in Chenu's Ill. Conch., pl. 14, f. 8, 9.

Var. *miniacea* Bolten, Mus. Bolt., p. 33, 1798.

*miniata* Link, Besch. Rostock Samml., pl. 2, p. 95, 1807.

*erythrostoma* Lam., Ann. Du Mus., xvi, 309, 1810.

*magnifica* Ducros, Revue critique du genre Oliva, p. 30, pl. 1, f. 4. 1857.

*azemula* Duclos, in Chenu's Ill. Conch., pl. 15, f. 10, 11, (decorticated)

Var. *porphyritica* Marr. (pars) Thes. Conch., pl. 7, f. 105.

Var. *sylvia* Duclos (pars) in Chenu's Ill. Conch., pl. 14, f. 12.

Var. *marrati* Johns., Naut., vol. xxiv, p. 51, 1910.

1a. Subsp. *irisans* Lamarck, Ann. du Mus., xvi, 312, 1810.

Var. *zeilanica* Lam., Anim. sans vert., vii, 436, 1822.

*mazaris* Ducl. in Chenu's Ill. Conch., pl. 22, f. 7, 8.

Var. *ornata* Marrat, Illus. Conch., iv, pl. 7, f. 102, 103.

*cylindrica* Marr. (not Sowerby) Thes. Conch. iv, p. 14, f. 193, 594.

*lignaria* Marr., Illus. Conch., iv, pl. 14, f. 195, 196.

Var. *cryptospira* Ford, Proc. Acad. Nat. Sci. Phila., 1891, p. 99, f. 3, 4.

Var. *fordii* Johnson, Naut., vol. xxiv, pl. 51, 1910.

Both Bolton and Lamarck refer to the same figure in Martini (Conch. Cab., ii, tab. 51, f. 559) which represents the finely marked, indistinctly banded form, with a light cream-yellow aperture. Length 70-85 mm.

Under the Var. *tremulina* is grouped a large series connecting *sericea* with *miniacea*, but typified by having a white or bluish white aperture. It was not figured by Lamarck but all the authors seem to agree—although several intermediate figures are given. The typical form is that figured by Reeve, pl. 4, f. 6c; Weinkauff, pl. 17, f. 2; Marrat, pl. 8, f. 117. *O. fumosa* is only a dark smoky form. The Var. *olympiadina* is restricted to

figures 11 and 12, an albinic form. *Nobilis* represents the large three-banded form, *pica* the brown form with large white sub-triangular spots, and *tenebrosa* the almost or entirely brown form. Length 70–100 mm.

The thick, light-colored var. *ponderosa* is intermediate between forms referable to *tremulina* on the one hand and *miniacca* on the other. The latter both Bolten and Lamarck refer to the same figures by Martini (Conch. Cab., ii, tab. 45, figs. 476, 477). I have restricted the *porphyritica* to the small form (45–55 mm.) with bands of bright purple spots, of which I have recently received specimens through Mr. Wm. N. Southern, collected by Mr. Frank E. Rand, at Ponape, Caroline Islands. The name of *sylvia* is applied to the orange-yellow form with a red aperture, and *marrati* to the dark brown red-mouthed form as figured by Marrat, (Thes. Conch., pl. 7, f. 109), representing a parallel variation to that of *tenebrosa* and *fordi*.

The subspecies *irisans*, though poorly defined, is the oldest name and has already been applied to various forms of this group by authors. There is only one figure referred to by Lamarck that can be considered as *irisans* (Martini, Conch. Cab. II, Tab. 561); the others are questioned. This figure has not a callous spire and the description "*spire acuminata*" does not apply to the low callous-spired forms, figured by Weinkauff, Marrat and Duclos, but to the form figured by Reeve (Pl. 6, fig. 8b). Figure 8d is the orange-yellow acutely spired *zeilanica* and fig. 8a the low callous-spired *ornata*. The typical *cryptospira* is light yellow with only slight traces of dark marking (Thes. Conch., pl. 9, f. 125) while *fordi* is the dark brown, callous-spired form (Thes. Conch., pl. 9, f. 126). There is also a pure white, callous-spired form (*albescens*).

## 2. OLIVA OLIVA (Linné).

*Voluta oliva* Linné, Syst. Nat., 10 ed. p. 729, 1758.

*Porphyria vidua* Bolten, Mus. Bolt., p. 35, 1798.

*Cylindrus nigellus* Meuschen, Mus. Gevers., p. 376.

*O. maura* Lam., Ann. du Mus., xvi, p. 309, 1810.

*O. mauritiana* (Martini) Marrat (pars) Thes. Conch., iv, pl. 10, 1870.

Var. *fenestrata* Bolten, Mus. Bolt., p. 34, 1798.

*fusca* Link, Besch. Rostock. Samml., p. 95, 1807.

Var. *fulminans* Lam., Ann. du Mus., xvi, p. 312, 1810.

Var. *sepulchralis* Lam., Ann. du Mus., xvi, p. 311, 1810.

Var. *macleaya* Ducl.; in Chenu's Ill. Conch., pl. 23, f. 13-16.

*fabreii* Ducros, Revue critique du genre *Oliva*, p. 43, pl. I, f. 8, 1857.

The species *oliva* Linné cannot be ignored, in the light of our present ruling in nomenclature; while a composite species, the prevailing form is readily recognized as Hanley in his "Shells of Linneus" page 215 says:—"Still it is not unworthy of remark that the *Oliva nigrita* of Karsten (*O. maura* of Sowerby, Genera Shells) has been indicated as the principal variety or form in the 'Museum Ulricæ' and that all cited engravings (Argenville alone excepted) of the tenth edition of the 'Systema' wherein the species originally appeared, pertain to that shell". The plain olive-green or yellowish form is *fenestrata*; with broad irregular longitudinal stripes, *fulminans*; with narrow irregular stripes and bands *sepulchralis*; with a light pearl-gray ground color and less conspicuous markings the more pronounced var. *macleaya*.

### 3. OLIVA TIGRINA (Lamarck).

*O. tigrina* Lam., Ann. du Mus., xvi, p. 322, 1810 (not Meuschen).

*O. holoserica* (Martini) Marrat, Thes. Conch., pl. xiii, f. 179, 181.

*O. athonia* Ducl. in Chenu's Ill. Conch., pl. 5, f. 22, 23 (juv.)

*O. stainforthii* Reeve, Conch. Icon., vi, pl. 19, f. 40 (juv.)

Var. *fallax* Johnson, Nautilus, xxiv, 65, 1910.

The dark brown form resembling *O. oliva* is the var. *fallax*, representing the color variation common to many species.

### 4. OLIVA FUNEBRALIS (Lamarck).

*O. funebris* Lam., Ann. du Mus., xvi, p. 332, 1810.

*O. labradorensis* (Bolten) Marr., Thes. Conch., pl. xi, f. 146-148.

- O. leucostoma* Ducl. in Chenu's Ill. Conch., pl. 29, f. 14-16.  
*O. propinqua* Marr., Thes. Conch., pl. xi, f. 141-142.  
*O. avelana* (Lam.) Marr. Thes. Conch., pl. xi, f. 149-150.  
*O. glandiformis* Marr. (not Lam.) *pars*, Thes. Conch., pl. xii, f. 174, 175.

*O. galiola* Ducl., in Chenu's Ill. Conch., pl. 30, f. 5, 6.

An extremely variable species, the limits of which are very difficult to define. The figure cited by Bolten is unrecognizable. *O. avelana* as figured by Marrat probably represents faded examples, of which I have seen similar colored specimens. Under *glandiformis* Marrat figures at least two species; figure 173 is a form of *elegans*, the others probably variations of this species. The figure referred to by Lamarek as *glandiformis* can not be identified.

#### 5. OLIVA BULBOSA (Bolten).

- Porphyria bulbosa* Bolt., Mus. Bolt., p. 34, 1798.  
*Oliva undulata* Lam., Ann. du Mus., xvi, p. 318, 1810.  
*Voluta ventricosa* Dillw., Cat. Recent Shells, i, 515, 1817.  
 Var. *inflata* Lam., Ann. du Mus., xvi, 319, 1910.  
*picta* Reeve, Conch. Icon. Oliva, sp. 79, pl. 26, f. 79 (juv.)  
*ovum-ralli* Ford, Proc. Acad. Nat. Sci. Phila., 1889, p. 139.  
 (decorticated).

Var. *tuberosa* Bolt., Mus. Bolt., p. 37, 1798.

*bicingulata* Lam., Ann. du Mus., xvi, p. 319, 1810.

*bicincta* Marr., Thes. Conch., iv, pl. xiii, f. 189.

Var. *fabagina* Lam., Ann. du Mus., xvi, p. 325, 1810.

*crassa* (Martini) Marrat, Thes. Conch., iv, pl. xiii, f. 186,

The typical form has undulating longitudinal stripes, both Bolten and Lamarek referring to the same figures (Conch. Cab. ii, Tab. 47, f. 507, 508). Var. *inflata* has only small bluish-gray spots and *bicingulata* two dark brown bands. Var. *fabagina* is irregularly clouded with dark brown. Pure white examples constitute the var. *alba*.

#### 6. OLIVA VARIEGATA (Bolten)

*Porphyria variegata* Bolt., Mus. Bolt., p. 33, 1798.

*O. exania* Ducl. in Chenu's Ill. Conch., pl. 22, f. 3, 4.

*O. zebra* Kuster, Conch. Cab., Oliva, Tab. 5, 6, 1878.

Var. *reticulata* (Bolten).

*Porphyria reticulata* Bolt., Mus. Bolt., p. 33, 1798.

*O. sanguinolenta* Lam., Ann. du Mus., xvi, 316, 1810.

The grayish-white reticulated form is typical. The dark olive-green, finely reticulated form is the var. *reticulata*. In the latter case both Bolten and Lamarck refer to the same figures (Martini, Conch. Cab. ii, Tab. 48, f. 512, 513).

#### 7. OLIVA TRICOLOR Lamarck.

*O. tricolor* Lam., Ann. du Mus., 316, 1810.

*O. guttula* (Martini) Marr., Thes. Conch., iv, pl. xii, f. 165-168.

var. *philantha* Ducl., in Chenu's Ill. Conch., ii, pl. 22, f. 5, 6.

This species is more closely related to *variegata* than to *elegans*. The var. *philantha* is the light-colored form often approaching *O. caerulea* in external appearance.

#### 8. OLIVA CÆRULEA (Bolten).

*Porphyria caerulea* Bolt., Mus. Bolt., xvi, p. 313, 1810.

*O. episcopalis* Lam., Ann. du Mus., xvi, p. 313, 1810.

Var. *lugubris* Lam., Ann. du Mus., xvi, 317, 1810.

The var. *lugubris* is based on the small form heavily clouded with brown, as figured by Duclos, (Chenu's Ill. Conch., ii, pl. xi, f. 5, 6.) also by Marrat (Thes. Conch. iv, pl. 4. f. 48). It was not figured by Lamarck.

#### 9. OLIVA ISPIDULA (Linné)

*Voluta ispidula* Linné, Syst. Nat., 10 ed. p. 730, 1758.

*O. hispidula* Ducl. in Chenu's Ill. Conch., Oliva p. 14, *ispidula* pl. 8.

*O. tigridella* Ducl. in Chenu's Ill. Conch., pl. 9, f. 13, 14.

Var. *stellata* Ducl. Chenu's Ill. Conch., pl. 8, f. 11, 12.

Var. *taeniata* Link, Besch. Rostock Samml., pl. 2, p. 98, 1807.

Var. *flaveola* Ducl., Chenu's Ill. Conch., pl. 7, f. 17-20.

Var. *candida* Lam., Ann. du Mus., xvi, p. 322.

This extremely variable species, most readily distinguished

by its brown aperture, has several well marked varieties. Var. *stellata* is white with coarse brown markings and low spire, *taeniata* white with a broad subsutural band,—*flavcola* is yellow with a white aperture and *candida* is an albino form. Specimens from Sarmar, Philippines, collected by Mr. E. L. Moseley, are all uniform in color, representing the dark reticulated form (Thes. Conch., fig. 248). This might bear the varietal name of *samarensis*.

#### 10. OLIVA ANNULATA (Gmelin).

*Voluta annulata* Gmel., Syst. Nat., p. 3441, 1790.

*O. leucophaea* Lam. Ann. du Mus., xvi. p. 314, 1810.

Var. *amethystina* Bolten., Mus. Bolt., p. 35, 1798.

*aurata* Link, Besch. Rostock. Samml., pl. 2, p. 97, 1807.

*guttata* Lam., Ann. du Mus., xvi, p. 315, 1810.

*cruenta* (Solander) Dillw., Cat. Recent Shells, i, 514, 1817.

*maculata* Ducl. in Chenu's Ill. Conch., pl. 16, f. 1-5.

Var. *mantichora* Ducl., Chenu's Ill. Conch., pl. 16, f. 7, 8.

*emicator* Marrat. (Pars), Thes. Conch., pl. 5, f. 57, 60.

It seems unfortunate that the pale abnormal form should have to be the type of the species, instead of the beautiful *amethystina*. To the latter both Bolten and Lamarck refer to the same figures by Martini (Conch. Cab. ii, Tab. 46, f. 491, 492). Many specimens of the var. *mantichora* show the same malformation of the typical form—an elevated ridge at the periphery.

#### 11. AGARONIA GIBBOSA (Born).

*Voluta gibbosa* Born, Test. Mus. Caes., p. 215, 1780.

*Voluta utriculus* Gmelin, Syst. Nat., p. 3441, 1790.

*Oliva gibbosa* Marrat, Thes. Conch. iv, pl. 19, f. 307 (pars).

*Oliva (Agaronia) gibbosa* Tryon, Manual Conch., v, 90, f. 85-87, 1883.

The dark brown specimens are usually decorticated. The orange-yellow form might bear the varietal name of *A. g. auran-tia*, n. var.

#### 12. OLIVANCILLARIA URCEUS (Bolten).

*Porphyria urceus* Bolt., Mus Bolt., p. 37, 1798.

*Oliva brasilana* Lam., Ann. du Mus., xvi, 322, 1810.

*Voluta pinguis* Dillw., Cat. Recent Shells, i, 516, 1817.

*Oliva (Olivancillaria) brasiliiana* Tryon, Manual Conch., v, 90, pl. 36, f. 88.

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TWO NEW VARIETIES OF VALVATA.

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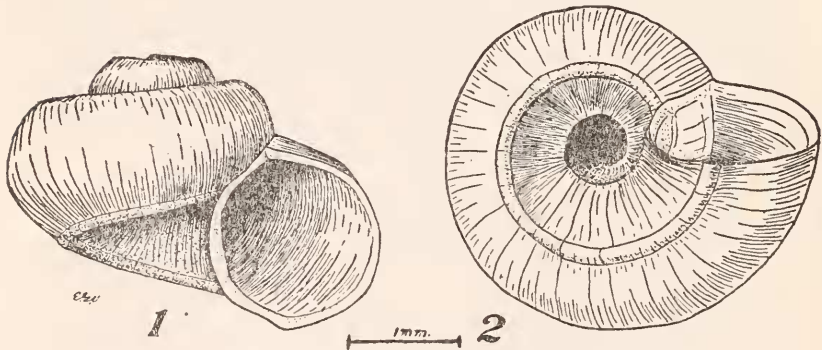
BY E. G. VANATTA.

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VALVATA TRICARINATA INFRACARINATA n. var. fig. 1, 2.

Shell globose, depressed, translucent, early whorls orange colored, body-whorl greenish gray, spire moderately elevated, apex obtuse, suture linear, whorls  $3\frac{1}{4}$ , rapidly increasing, last whorl flattened above, with an impressed line near the suture, slightly angular at the shoulder, periphery rounded, surface polished, provided with irregular growth lines. Umbilicus wide, deep, funnel-shaped, surrounded by a strong carina. Aperture oblique, orbicular, slightly angular at the suture and base, parietal wall short, lip thin.

Alt. 2.53 diam. 3.48 apert. alt. 1.74 diam. 1.55 mm.



Type in the collection of the Academy of Natural Sciences number 12087 from White Pond, New Jersey, collected by Dr. H. A. Pilsbry and Mr. S. N. Rhoads in 1895. Also in the collection from Hamilton, Ontario (Robert Walton); Mohawk, New York (Dr. James Lewis); Post Pliocene at Halcyon Lake,